

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is requested. Claims 2-8 and 45-51 are in this application. Claims 1, 9, 10, and 11-44 have been cancelled. Claims 2-8 have been allowed. Claims 45-51 have been added. Support for new claims 45, 46, 47, 48, 49, 50, and 51 can be found in claims 1, 11, 29, 15, 16, 17, and 18, respectively.

The Examiner rejected reissue claims 18, 27, and 36 under 35 U.S.C. §251 as being an improper recapture of subject matter surrendered during the prosecution of the original patent claims. As noted above, claims 18, 27, and 36 have been cancelled. For the reasons set forth below, applicant respectfully traverses this rejection as applied to new claims 45-51.

New claim 45 recites:

“a shared bus that transfers data and instructions;

“a shared memory array that stores data and general purpose instructions and that is connected to transfer data and general purpose instructions between the shared bus and the shared memory array;

“a digital signal execution unit (DSEU) connected to the shared bus that processes the digital signal utilizing data transferred between the shared memory array and the DSEU on the shared bus and a selected sequence of individual DSEU instructions, the selected sequence of DSEU instructions including individual general purpose instructions transferred between the shared memory array and the DSEU on the shared bus; and

“a general purpose processor (GPP) connected to the shared bus for controlling the DSEU by selecting each general purpose instruction to be transferred to the DSEU from the shared memory array, the selected sequence of individual DSEU instructions executed by the DSEU being selectively configurable by the GPP selecting individual general purpose instructions.”

To determine whether impermissible recapture is present, a three-step recapture analysis is used. The first step is to determine whether and in what aspect the reissue claims are broader than the claims in the patent.

Patent claim 1 recites:

“a shared bus for transferring both data and instructions;  
“a shared memory array for storing both data and general purpose instructions and that is connected for transfer of both data and general purpose instructions between the shared bus and the shared memory array;  
“a digital signal execution unit connected to the shared bus for processing the digital signal utilizing both data transferred between the shared memory array and the digital signal execution unit on the shared bus and a selected sequence of individual digital signal processor (DSP) instructions, the selected sequence of DSP instructions consisting of individual general purpose instructions transferred between the shared memory array and the digital signal execution unit on the shared bus; and  
“a general purpose processor connected to the shared bus for controlling the digital signal execution unit by selecting each general purpose instruction to be transferred to the digital signal execution unit from the shared memory array,  
“whereby the selected sequence of individual DSP instructions executed by the digital signal execution unit is selectively configurable by the general purpose processor.”

With respect to the shared bus element, both patent claim 1 and reissue claim 45 recite a shared bus that transfers data and instructions. Thus, the shared bus element of reissue claim 45 is not broader than the shared bus element of patent claim 1.

With respect to the shared memory element, both patent claim 1 and reissue claim 45 recite a shared memory that stores data and general purpose instructions, and transfers the data and general purpose instructions between the shared bus and the shared memory. Thus, the shared memory element of reissue claim 45 is not broader than the shared memory element of patent claim 1.

With respect to the digital signal execution unit (DSEU), both patent claim 1 and reissue claim 45 recite a DSEU. Patent claim 1 differs from reissue claim 45 in that patent claim 1 recites that the selected sequence of DSP instructions consists of individual general purpose instructions, whereas reissue claim 45 recites that the selected sequence of DSEU instructions includes individual general purpose instructions. Thus, since the term "includes" is broader than the phrase "consists of," reissue claim 45 is broader than patent claim 1.

With respect to the general purpose processor (GPP), both patent claim 1 and reissue claim 45 recite a GPP. Patent claim 1 differs from reissue claim 45 in that reissue claim 45 also includes the phrase "selecting individual general purpose instructions." Thus, reissue claim 45 is narrower than patent claim 1.

The second step in the three-step analysis is to determine whether the broader aspects of the reissue claim relate to surrendered subject matter. As noted above, the only broader aspect of reissue claim 45 relates to changing the phrase "consisting of" to the term "includes." The limitation "the selected sequence of DSP instructions consisting of individual general purpose instructions" was added to application claim 16 in the January 7, 1994 amendment to overcome the Davis et al. rejection. As a result, the broader aspect of reissue claim 45 appears to be related to surrendered subject matter.

The third step in the three-step analysis is to determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule. If the reissue claim recites a broader form of a limitation added/argued during the original prosecution to overcome an art rejection, then the reissue claim may not be rejected under the recapture rule.

For example, if the limitation "an orange peel" was added to overcome an art rejection, and the reissue claim recites "a citrus fruit peel," which is a broadened form of the "orange peel" limitation that was added during prosecution, the reissue

claims may not be rejected on recapture grounds. (See MPEP §§1412.02(I)(C) and 1412.02(I)(C)(2)(d).)

In the present case, reissue claim 45 is materially narrower in scope when compared to the claims cancelled during the original prosecution. As noted above, the limitation "the selected sequence of DSP instructions consisting of individual general purpose instructions" was added to application claim 16 in the January 7, 1994 amendment to overcome the Davis et al. rejection, whereas reissue claim 45 recites "the selected sequence of DSEU instructions including individual general purpose instructions," which is a broadened form of the limitation. (Underlining added.)

As a result, reissue claim 45 retains in broadened form the limitation added and argued in the January 7, 1994 amendment to overcome the Davis et al. art rejection of application claim 16. Application claim 16 replaced cancelled application claim 1 in the December 9, 1992 amendment, and subsequently issued as patent claim 1.

Thus, in view of the three-step recapture analysis, reissue claim 45 has been materially narrowed in other aspects to avoid the recapture rule because reissue claim 45 retains in broadened form a limitation added and argued to overcome a prior art rejection in the original prosecution. Therefore, since reissue claim 45 is materially narrower than the cancelled claims of the patent, reissue claims 45-51 may not be rejected on recapture grounds.

The Examiner rejected claims 18, 28, and 36 under 35 U.S.C. §103(a) as being unpatentable over Parruck et al. (U.S. Patent No. 4,799,144) in view of Akagi et al. (U.S. Patent No. 4,467,414) and further in view of Boddie (U.S. Patent No. 4,539,635). The Examiner also rejected claims 37-39 under 35 U.S.C. §103(a) as being unpatentable over Parruck et al. in view of Davis et al. (U.S. Patent No. 4,991,169). As noted above, claims 18, 28, and 36-39 have been cancelled.

Applicant respectfully traverses this rejection as applied to new claims 45-51 because applicant has been unable to find any discussion in Parruck et al., Akagi et al., Boddie, or Davis et al. that teaches or suggests, either alone or in combination, that the processor (GPP) selects individual general purpose instructions drawn from a general purpose instruction set that can be executed by the DSP (DSEU) and the processor (GPP). (See the first full paragraph on page 9 of the January 7, 1994 amendment.)

As a result, claim 45 is patentable over the Parruck et al., Akagi et al., Boddie, and Davis et al. references. In addition, since claims 46-51 depend either directly or indirectly from claim 45, claims 46-51 are patentable over the Parruck et al., Akagi et al., Boddie, and Davis et al. references for the same reasons as claim 45.

Thus, for the foregoing reasons, it is submitted that all of the claims are in a condition for allowance. Therefore, the Examiner's early re-examination and reconsideration are requested.

Respectfully submitted,

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